

# LINEAR-IN-DECIBEL VARIABLE GAIN AMPLIFIER

## Abstract

A variable gain amplifier having a linear decibel-scale gain comprises an amplifying stage for generating an output voltage according to a differential input voltage, and a gain-controlling stage for outputting a gain-controlling voltage to the amplifying stage according to a first controlling voltage and a second controlling voltage. A voltage gain of the variable gain amplifier is inversely proportional to a simple exponential function, and the value of the simple exponential function is determined by the difference between the first controlling voltage and the second controlling voltage.